

ADDITIONAL SPECIES, NEW COMBINATIONS AND OTHER NOTES ON ACANTHACEAE OF AUSTRALIA

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Abstract

A number of new species, both native and naturalised, are newly recorded for Australia. The majority of these, *Ruellia squarrosa* (Fenzl) Cufod., *Hygrophila* "Lake McDonald", *Barleria cristata* L., *Odontonema tubaeforme* (Bertol.) Kuntze and *Hemigraphis reptans* (Forst.f.) T. Anderson, represent introductions which have subsequently become naturalised. Species previously referred to *Sarajusticia* Bremek. and *Calophanoides* (Clarke) Ridley have been transferred to *Harnieria* Solms-Laub. to give the new combinations *Harnieria hygrophiloides* (F. Muell.) R.M. Barker, *H. kempeana* (F. Muell.) R.M. Barker and *H. kempeana* ssp. *muelleri* (R.M. Barker) R.M. Barker. A possible new species of *Harnieria* is described but left unnamed since the material is inadequate, as is a possible new taxon of *Dipteracanthus*.

There are additional notes on *Ruellia*, *Asystasia* and *Graptophyllum* as well as *Thunbergia grandiflora* (Roxb. ex Rottler) Roxb., *Brunoniella spiciflora* (F. Muell. ex Benth.) Bremek., *Xerothamnella parvifolia* C.T. White and *X. herbacea* R.M. Barker, *Dicliptera australis* (Nees) R.M. Barker, *Hypoestes aristata* (Vahl) Sol. ex Roemer & Schult. and *H. phyllostachya* Bak. and *Rhaphidospora cavernarum* (F. Muell.) R.M. Barker. New Guinea specimens previously referred to *Rhaphidospora platyphylla* (S. Moore) Bremek. are synonymous with *R. cavernarum* (F. Muell.) R.M. Barker.

Introduction

Since the publication of the revision of Acanthaceae for Australia (Barker 1986), there have been a considerable number of new collections from all states, but particularly Western Australia, Northern Territory and Queensland. Consequently there are a number of changes and additions which need to be made to upgrade the treatment of the family. The order followed here is the same as that found in the revision. Only those species which were poorly known before have been mentioned for extensions of ranges, since all species are now represented by considerably more collections than existed at the time of the revision. New taxa are described without epithets in *Harnieria*, *Hygrophila* and *Dipteracanthus*; these are all based on one or two collections and described here in the hope that more material can be found before they are formally named. In some cases it is not clear whether they represent native or naturalised species.

A cautionary note needs to be sounded here since many of the Acanthaceae cultivated as garden subjects have the ability to become troublesome weeds. *Thunbergia grandiflora* (Roxb. ex Rottler) Roxb., *Thunbergia alata* Boj. ex Sims, *Acanthus* cf. *mollis* L., *Barleria* spp. and *Ruellia s.lat.* spp. have already been documented but species of *Hypoestes* and *Odontonema* have now to be added to the list of naturalised species with potential to spread.

Thunbergia

Authorship of *Thunbergia grandiflora*

The authorship of this species was somewhat controversial, but in a recent paper Daniel (1991) has cited the authorship as *T. grandiflora* (Roxb. ex Rottler) Roxb. based on *Flemingia grandiflora* Roxb. ex Rottler, in agreement with my original citation.

Ruellia

Generic distinctions between *Ruellia s.str.*, *Dipteracanthus* and *Brunoniella*

As has been already mentioned in the revision (Barker 1986), distinctions between *Dipteracanthus* Nees, *Ruellia s.str.* and *Brunoniella* Bremek. are clear cut when only

Australian taxa are considered. The introduction of cultivated *Ruellia* species of unknown origin into gardens within Australia often erode these differences. Taking into account the introduced species mentioned below, the genera can still be distinguished by the following key.

- 1 Bracteoles longer than calyx, leaf-like; capsule club-shaped..... *Dipteracanthus*
- 1: Bracteoles shorter than calyx; capsule flattened cylindrical or club-shaped
 - 2 Capsules 1–6-seeded, flattened-cylindrical; stigma pubescent..... *Brunoniella*
 - 2: Capsules more than 10-seeded, flattened cylindrical or club-shaped
 - 3 Corolla red, throat inflated on one side, lobes short and erect..... *Stephanophysum**
 - 3: Corolla blue, purple or red, throat symmetrical, lobes spreading..... *Ruellia**

Naturalised *Ruellia* species

The naming of introduced species of *Ruellia* L. used in the horticultural trade is usually extremely difficult since there is no overall account of *Ruellia* s. lat. of the world. Comparison of named species in Australian Botanic Gardens with the descriptions to be found in floras often reveals discrepancies and it is not known whether this is due to different growing conditions or whether the species is wrongly named. Specimens have already been referred to *R. aff. malacosperma* since they did not truly agree with either *R. malacosperma* Greenm. or the closely related *R. brittoniana* Leonard, both of which are recognised in their native habitat in the Americas.

Key to introduced *Ruellia* species

- 1 Flowers red [not recorded as naturalised as yet] *R. elegans*
- 1: Flowers blue or purple
 - 2 Inflorescence long pedunculate from the axils; seed with mucilaginous hairs all over
 - 3 Leaves ovate, 1.5–3.5 cm wide; calyx lobes glabrous or with sparse eglandular hairs *R. tuberosa*
 - 3: Leaves narrowly oblong, less than 1.5 cm wide; calyx lobes with glandular hairs
..... *R. aff. malacosperma*
 - 2: Inflorescence solitary in the axils; seed with thickened rim of mucilaginous hairs; [plants pilose, some of the lax hairs glandular]..... *R. squarrosa*

Ruellia tuberosa L.

There has been a marked spread of *R. tuberosa* L. in 10 years in the Northern Territory, and there are now records of this species as naturalised in Queensland and Western Australia. It has also been collected as a troublesome garden weed (*Dorney 62*).

Specimens examined

AUSTRALIA: NORTHERN TERRITORY: *R.W. Purdie 3430*, 2.v.1987, Black Jungle area, SE of Darwin (AD, CANB); *R.M. Barker 690*, 12.v.1994, Adelaide River, below Stuart Hwy bridge in parking bay (AD, duplicates to be distributed).

QUEENSLAND: *C.A. Rehbein s.n.*, 13 April 1982, Portion 189, Parish of Leichhardt Downs. From a single plant 18 months ago, it has now spread over two square metres of lawn (BRI); *E.L. Shannon s.n.*, April 1986, Airdmillan Road, Ayr (BRI); *T. Stanley 80174*, 13 Feb 1980, Roadside, near Townsville airport (BRI); *W. Dorney 62*, 29.i.1987, 38 Millchester Rd, Charters Towers (BRI).

WESTERN AUSTRALIA: *A.A. Mitchell 3118*, 26.v.1993, Koolan town site, old unwatered garden (AD, BROOME, PERTH).

Ruellia aff. malacosperma

Ruellia aff. malacosperma is now much more widely recorded in Queensland, including from vine forest (*Godwin s.n.*) and from rainforest (*Thompson 176*).

Specimens examined

AUSTRALIA: QUEENSLAND : *E.R. Anderson 4468*, 21 March 1988, 15 km S of Mt Larcom, Calliope Shire (BRI); *L.H. Bird s.n.*, 20 May 1991, Bundamba Creek, Bundamba, Ipswich (BRI); *Godwin C2467*, August 1983, R774, Parish of Smithfield, bank of Barron River (BRI); *D. Rowland s.n.*, 2 Jan 1992, Gympie City, edge of creek (BRI); *T. Stanley 488*, 18 Feb 1980, North Rockhampton, wasteland adjacent to creek bank and surrounding built-up areas (BRI); *T. Stanley 738*, 20 Feb 1980, Near coal terminal, Gladstone (BRI); *P.K. Thompson 176*, 9 Dec 1989, Reliance Creek, E of Habana (BRI); *F. Waterson s.n.*, 14 Feb 1994, "Stowe Park", Brahman Stud, Calliope Shire (BRI).

Ruellia elegans

Ruellia elegans Poiret, *Encycl. Suppl.* 4: 727 (1816); new name for *R. formosa* Andr.

Ruellia formosa Andr., *Bot.Repos.* 10: tab. 610 (1810) non *Ruellia formosa* Humb. & Bonpl. 1805.

Arrhostoxylon formosum (Andr.)Nees in Martius, *Fl. Bras.* 9: 62 (1847); nom. illeg.

Arrhostoxylon elegans (Poiret)Bremek., *Nederl. Akad. Wetensch., Verh. (Tweede Sect.)* 45(1): 12 (1948).

Type: Illustration in Andrews, *Bot. Repos.* 10: tab. 610 (1810) based on specimen supplied by Donn, Curator of the Botanic Gardens at Cambridge.

Only cultivated specimens have been seen.

Specimens examined

AUSTRALIA: QUEENSLAND: Jindalee, Brisbane, 19.iii.1980, *S.T. Reynolds s.n.* (BRI); Brisbane Botanic Gardens, 28.iii.1977, *H. Caulfield s.n.* (BRI).

Questionable *Ruellia* sp.

A collection referred to as *Ruellia elegans* (syn. *Ruellia formosa*: see Ezcurra 1993) by the Brisbane herbarium represents a species which has become naturalised on roadsides in Mackay. However the collection is only vegetative and there is no way of knowing whether it is even a *Ruellia*. It is certainly not *R. elegans* since it differs from that species in indumentum and cystolith morphology and is in addition a shrub of 1–2 metres, whereas *R. elegans* is a sparsely branched herb to 50 cm.

Specimens examined

AUSTRALIA: QUEENSLAND: *G.N.Batianoff 9303383*, *H.A.Dillewaard & I.G.Champion*, 7 March 1993, Slade Point, Teal Strait, Mackay (BRI).

Ruellia squarrosa

Ruellia squarrosa (Fenzl)Cufod. in Walker, *Baileya* 17: 40–42, fig. 1 (1970).

Dipteracanthus squarrosus Fenzl, *Del. Sem. Hort. Bot. Univers. Vindobon. Collect. Anno 1868*: 10 (1869).

Type: "C[ultus in] h[orto] V[indobonensi], 1868, Jul 30. Ex h[orto] Schoenbr[unnensi]." (W) fide Walker (1970), including photograph of type.

Sprawling perennial herb. Branches to 60 cm long, densely pilose with erect whitish 3–4-celled eglandular hairs, some of these sometimes with small gland apically. Leaves with blade ovate or narrowly ovate, up to 6 cm long, 2 cm wide, attenuate at base, entire, acute apically, younger leaves densely white pilose, sparser with age; petioles to 2 cm long. Inflorescence axillary, solitary. Bracteoles linear, 4.5–9 mm long, much shorter than calyx, pubescence as on stems and petioles, but usually glandular. Pedicel to 1 mm long on mature

flowers. *Calyx* 10–16 mm long; lobes linear, equal, joined only at very base, pubescence as on bracteoles, persistent but lobes reflexed after fruit is lost. *Corolla* blue, finely pubescent externally on tube and throat and on veins and apex of lobes; tube c. 25 mm long; throat c. 12 mm long, curved slightly; lobes c. 15 mm long, more or less equal. *Stamens* with filaments c. 10 and 14 mm long, pubescent at base, just exerted from throat; anther cells parallel, c. 3 mm long, glabrous; connective extended at apex. *Ovary* glabrous; style minutely hairy, c. 30 mm long; stigma very unequally 2-lobed, longer lobe to 3 mm long, glabrous. *Capsule* 12–15 mm long, glabrous, 16–20-seeded, very shortly stipitate. *Seed* c. 2 mm diameter, thickened rim with mucilaginous hairs, otherwise glabrous.

As yet only known to be naturalised in garden situations but has great potential for spread in waste areas. Flowers ?most of year.

This species has been variously referred to as *Ruellia dipteracanthus* (Nees)Hemsley, *Ruellia squarrosa* (Fenzl)Cufod. and *Ruellia ciliosa* Pursh. It is common in the nursery trade in South Australia, particularly for hanging baskets, and here the name *Ruellia makoyana* hort. Makoy has been used, mainly on the basis of the silvery-white midrib and veins. This last name is obviously incorrect since the original description indicates that flowers of that species are red. *R. ciliosa* Pursh. is a basal rosetted species and so this name would also not apply.

The relationships of this species appear to lie closest to *Dipteracanthus*, except that the bracteoles are not leaf-like and longer than the calyx. Otherwise it possesses the club-shaped capsule and seeds in which the mucilaginous hairs are confined to the thickened rim and the sessile flowers of that group.

Many thanks to Les Pedley who first collected this species and asked for a name and then ended up drawing my attention to what is hopefully the correct name.

Specimens examined

AUSTRALIA: QUEENSLAND: *L. Pedley 5336*, 3 March 1986, Indooroopilly, naturalised in shady situations in gardens (AD, BRI); *L. Pedley 5307*, 14 Nov 1984, Indooroopilly, Brisbane (BRI).

Another specimen with affinities to *Ruellia squarrosa* but lacking flowers and mature fruits has been collected from the Bamaga region of Cape York Peninsula from the ground cover within mixed semi-deciduous notophyll vine thicket. It is a more robust plant than *Ruellia squarrosa*, but is covered with similar hairs, has similar bracteoles, solitary flowers and immature glabrous capsules. Further collections are required before a name can be applied. Whether or not it is a native, rather than an introduced species, also needs to be established.

Specimen examined

AUSTRALIA: QUEENSLAND: *D.G. Fell 3934*, *J.P. Stanton & C. Roberts*, 18 Feb 1994, Mt Bremer, western slopes, 26.0 km NE of Bamaga, Injinoo custodial land (BRI).

Stephanophysum

Equivalent name for *Stephanophysum longifolium* Pohl in *Ruellia*

Stephanophysum Pohl is a segregate of *Ruellia* L. and is not always recognised as a distinct genus. In searching for references to members of this genus, particularly in American literature, the appropriate synonym within *Ruellia* needs to be found. In the case of the species *Stephanophysum longifolium* Pohl, this was previously known as *R. graecizans* Backer since the name *Ruellia longifolia* was already preoccupied. It has recently been recognised that *Stephanophysum brevifolium* Pohl, published in the same paper as *Stephanophysum longifolium* Pohl, is conspecific with it and so the epithet "brevifolium" becomes available for use within *Ruellia*. Therefore any reference to

Stephanophysum longifolium Pohl should now also be searched for under *Ruellia brevifolia* (Pohl)Ezcurra as well as *R. graecizans* Backer.

Stephanophysum longifolium Pohl, *Pl. Bras. Icon. Descr.* 2: 85, tab. 156 (1831) n.v.

Ruellia longifolia (Pohl)Griseb. ex Lindau in Engler & Prantl, *Nat. Pflanzenfam.* IV, 3b: 311 (1895); nom.illeg. (predated by *R. longifolia* Rich., *Acta Soc. Hist. Nat. Par.* 1: 110 (1782).; *Ruellia graecizans* Backer, *Brittonia* 3: 85 (1938), "nomen novum for *Stephanophysum longifolium* Pohl".

Type: Brazil, without specific locality, Pohl s.n.; syn: W (fide Ezcurra 1993).

Ruellia brevifolia (Pohl)Ezcurra, *Darwiniana* 29: 278 (1989).

Stephanophysum brevifolium Pohl, *Pl. Bras. Icon. Descr.* 2: 84, t. 155 (1831).

Type: Rio de Janeiro, Brazil, s.dat., Schott s.n.; holo: W n.v. (fide Ezcurra 1993)

Echinacanthus dichotomus O. Kuntze, *Rev. Gen. Pl.* 489 (1891); Lindau in Engler & Prantl, *Nat. Pflanzenfam.* IV, 3b(1895)302.

Type: Buitenzorg, May 1875, O. Kuntze 4389; NY: n.v. (fide Ezcurra 1993).

Illustration: Ezcurra, C. (1993). *Ruellia* in Southern South America. *Ann. Missouri Bot. Gard.* 80: 803, fig. 7. (as *Ruellia brevifolia*).

Previously only recorded as naturalised near Nambour (Barker 1986).

Specimens examined

AUSTRALIA: extra specimens from QUEENSLAND: Foot Sanctuary, Buderim, 17.iii.1992, I.P. Joyce-Smith s.n. (BRI); Mulgrave River, c. 10 km upstream from Gordonvale, 30.iii.1992, J.P. Stanton s.n. (BRI).

Dipteracanthus

A single collection of what appears to be a new species of *Dipteracanthus* is described below, in the hope that more material become available. It is possible that it represents another subspecies of *D. australasicus* F. Muell. rather than a distinct species. It has the same questionably glandular hairs as those found on *D. australasicus* ssp. *dalyensis* R.M. Barker.

- 1 Stamens and style included in corolla throat; flowers more or less sessile; corolla blue, mauve, purple or white, opening during the day; tube less than 10 mm long before widening into throat; capsule glabrous.
 - 2 Branches and petioles with covering of short dense, suberect eglandular hairs obscuring cystoliths *Dipteracanthus "Kalpowar" (Fell 2969)*
 - 2: Branches and petioles glabrous or with lax eglandular hairs not obscuring cystoliths *D. australasicus*
- 1: Stamens and style exerted from corolla throat; flowers long-pedunculate; corolla white, cream or pale yellow, opening at night; tube 20–26 mm long before widening into throat; capsule with fine hairs at least in upper half. *D. bracteatus*

Dipteracanthus "Kalpowar" (Fell 2969)

Spreading erect herb to 30 cm; roots ?not tuberous. *Branches* more or less square in cross-section cystoliths not visible due to covering of short dense, suberect eglandular hairs, usually with longer, sparser, lax, 3–8-celled eglandular hairs ending in an elliptic swelling or gland. *Leaves* petiolate, blade broadly ovate, up to 5 cm long and 3.5 cm wide, rounded at base, crenulate, broadly acute at apex, sparsely pubescent with age with same pubescence as on stems extending onto young leaves, petioles, midribs, main veins and margins; cystoliths linear, obvious only on upper surface in dried specimens; petiole up to 12 mm long. *Inflorescence* triad in each axil, outer flowers of triad developing after central flower; flowers more or less sessile. *Bracteoles* shortly petiolate, obovate, c. 11 mm long including petiole, 4–5 mm wide, densely ciliate with long lax hairs which extend onto darker abaxial

surface, inserted almost immediately below calyx of two lateral flowers, not persisting in fruit. *Calyx* with truncate, slightly ridged base, c. 5 mm long; lobes linear, shortly ciliate. *Corolla* purple/mauve, ?1.5–2 cm long, moderately pubescent on throat and lobes with 2–3-celled lax eglandular hairs externally, shape unknown but probably as in *D. australasicus*; tube cylindrical, erect, glabrous externally, constricted apically at point of insertion of 4 stamens; lobes c. 4 mm long. *Stamens* included, inserted at top of tube where it bends into throat, filaments c. 4 mm long; anthers c. 2 mm long, with connective extended apically. *Disc* annular, with single extension. *Ovary* glabrous, with 4 overlapping ovules per cell; style c. 7 mm long, pubescent; stigma ?just exerted or ?included in throat of corolla; stigma with single broad lobe c. 1.5 mm long. *Capsule* glabrous, 6–8 seeds subtended by prominent hooks usually developing near middle of capsule. *Seed* c. 4 mm diameter, appearing glabrous when dry, thickened rim rapidly expanding on wetting to reveal hairs; flattened sides of seeds glabrous.

Spreading erect herb to 30 cm, roots ?not tuberous. Branches more or less square in cross-section.

Deciduous vine thicket with canopy of *Brachychiton australis* and *Gyrocarpus americanus* on uniform red brown coarse sandy loam derived from Dalrymple sandstone. Flowers and fruits present on March specimen.

Specimen examined

AUSTRALIA: QUEENSLAND: *D.G. Fell 2969 & J.P. Stanton*, 28.iii.1993, Bathurst Range, Kalpowar Pastoral Holding, 68.5 km N of Lakefield H.S. (AD, BRI).

Range extension for *D. australasicus* ssp. *dalyensis*

Dipteracanthus australasicus ssp. *dalyensis* R.M. Barker, previously only known from the Daly River Rd area in the Northern Territory, was extended in its range by a collection from the Fitzmaurice River area in 1994.

Specimen examined

AUSTRALIA: NORTHERN TERRITORY: *G.J. Leach 4272 & N.G. Walsh*, 9.v.1994, Bupa, 4 km S of Jarrong Yards (AD, DNA, MEL).

Brunoniella

Brunoniella spiciflora more common than previously thought

There have been a considerable number of collections of *B. spiciflora* (F. Muell. ex Benth.) Bremek. since the revision and it would appear that this species is not as threatened as was previously thought. The species has been recollected in all of the areas listed in the revision as well as from Upper Tallebudgera, south of Brisbane. *B. spiciflora* (F. Muell. ex Benth.) Bremek. was initially confused by Brisbane botanists with *Isoglossa eranthemoides* (F. Muell.) R.M. Barker from which non-flowering material can be distinguished by its 4–10 smooth, pubescent seeds and by the very unequal size of leaves in each leaf pair (anisophylly) compared with 1–4 ornamented, glabrous seeds and more or less isophyllous leaves of *I. eranthemoides* (F. Muell.) R.M. Barker.

Flower colour is noted as white on the one specimen which possessed flowers (*P.R. Sharpe 4825, E. Ross & L. Tan*), but the majority of collections were made in February and March when only fruits were present. All collections were from along watercourses in complex notophyll vineforest or closed rainforest or from sides of tracks.

Selected specimens examined

AUSTRALIA: QUEENSLAND: *P. Bostock s.n.*, 17.xii.1990, Upper Tallebudgera Creek, Gorge Falls area, 14 km SW pf Tallebudgera Village (BRI); *W.J. McDonald 4452a, D.G. Fell & J.P. Stanton*, 26.xi.1989, Southern side of

Broken River picnic area, Eungella N.P. (BRI); *P.R.Sharpe 4788*, 9.iii.1989, East Cedar Creek, Blackall Range, c. 8 km NNW of Mapleton (BRI); *P.Young 741 & J.Elsol*, 29.ii.1984, Boombana N.P., Mt Nebo, Brisbane Forest Park (BRI).

Brunoniella linearifolia

B. linearifolia R.M. Barker, along with a number of the *Brunoniella* species was recorded as questionably tuberous. A collection by Glen Wightman (*Wightman 3107*) removes any doubt about the tuberous nature of this species, since each individual plant has at least 8, and up to 14, tuberous roots at their base.

Specimen examined

AUSTRALIA: NORTHERN TERRITORY: *G.Wightman 3107*, 10.x.1986, Arnhem Hwy, 20 km W of West Alligator River (AD, CANB, DNA).

Hemigraphis

Extension of range for *H. royenii*

Collections of *Hemigraphis royenii* Bremek. have now been made from the McIlwraith Range. Previously it had only been recorded from the Iron Range. Two of the collections were from complex mesophyll vineforest, while the other was from grassland on a floodplain. All were fruiting, suggesting flowering occurs at the end of the wet season, which is at odds with the proposed flowering suggested in Barker 1986.

Specimens examined

AUSTRALIA: QUEENSLAND: *P.I.Forster 10511 & G.Sankowsky*, 13.vi.1992, Nesbit River (BRI); *P.I.Forster 10603, M.C.Tucker & G.Sankowsky*, 16.vi.1992, Rocky River Scrub, Silver Plains Stn (BRI); *P.I.Forster 10616, M.C.Tucker & G.Kenning*, 16.vi.1992, Rocky River Scrub, Silver Plains Stn, eastern fall of McIlwraith Range (BRI);

Introduced species becoming naturalised?

Hemigraphis reptans (Forst.f.)T. Anderson is a variable species often cultivated or found as a weed in tropical houses or nurseries. A recent collection from Palmerston, a suburb or Darwin, Northern Territory, almost certainly represents this species and comments on the collection indicate that it is here regarded as a weed. It can be distinguished from the native species, which is confined to the Iron and McIlwraith Ranges area of Queensland (see above), by its scarcely overlapping bracts in the inflorescence, these bracts also being distinctly petiolate at least in the lower part of the inflorescence. *H. reptans* often has the lower surface of the young leaves and bracts purplish in colour.

Specimen examined:

AUSTRALIA: NORTHERN TERRITORY: *I.D.Cowie 5187*, 1 Feb. 1995, 18 Widdup Cres., Palmerston (AD, DNA).

Hygrophila

A collection from Lake McDonald near Cooroy in Queensland by A.R. Bean (*Bean 6770*) represents a third species of *Hygrophila* R. Br. for Australia. It differs from *H. angustifolia* R. Br. and *H. cf. triflora* (Roxb.) Fosberg & Sacht by the lack of any hairs on the palate, the more divided calyx (fruits are not enclosed for most of their length in the fused calyx as in *H. angustifolia* and the smaller size of the flowers. Cystoliths are usually very visible in dried specimens of *H. angustifolia* but this is not the case for this material. It is possibly an introduced American species, *H. guianensis* Nees ex Benth., but authentic material has yet to be seen.

Replacement Key

- 1 Lower lip of corolla lacking any hairs and possibly without barred palate; calyx c. 6 mm long [Lake McDonald near Cooroy, Qld].....*Hygrophila "Lake McDonald"* (Bean 6770)
- 1: Lower lip of corolla with long hairs on barred palate; calyx more than 8 mm long.
 - 2 Plants not submerged, at edge of wet areas; leaves narrow-linear to lanceolate with entire or undulate margins, glabrous or with appressed eglandular hairs [northern Australia]..... *H. angustifolia*
 - 2: Plants often growing submerged; submerged leaves pinnatifid and glabrous, emergent leaves ovate, serrate and covered with erect glandular hairs [Once recorded from Berry Springs near Darwin; popular fish tank species]..... *H. triflora*

Hygrophila "Lake McDonald" (Bean 6770)

Herb to 90 cm. Stems quadrangular, longitudinally grooved, glabrous or moderately to densely pubescent with simple multicellular eglandular hairs. *Leaves* subsessile, narrowly elliptic, up to 9 cm long and 2 cm wide, subentire, acuminate, subglabrous or sparsely appressed pubescent above and below, particularly on midrib and veins. *Inflorescence* comprising axillary whorls of 10 or more flowers. *Bracteoles* shorter than calyx. *Calyx* 5-lobed, 5.5–6 mm long; sepals joined below half way, shortly pubescent on margins and midrib. *Flowers* white, 2-lipped, shortly appressed eglandular pubescent externally; tube 3.5 mm long; upper lip 2.5 mm long, 2-lobed, porrect; lower lip 3 mm long, 3-lobed, with longitudinal folds on lower lip but lacking any hairs and, from dried material, apparently lacking any barred coloration. *Stamens* didynamous, each long and short filament joined by basal pubescent membrane, free filaments glabrous, 1.5 mm long and 0.5 mm long respectively; anthers 0.8 mm long. *Ovary* glabrous; style simple, glabrous; stigma very unequally 2-lobed. *Capsule* narrowly ellipsoid, 6–8 mm long, c. 20-seeded, seeds more numerous at base; retinacula present.

Recorded from swampy margins of lake, with *Persicaria*. Flowering October, fruiting inflorescences present February.

The two specimens known both came from Lake McDonald, one in October 1993 and the second in February 1994. Despite the fact that the accompanying labels indicate that they came from different districts and from different latitudes and longitudes, it is assumed that both came from the same locality i.e. Lake McDonald near Cooroy. The first collector of the species, A.R. Bean, obviously recognised the difference of this species from *H. angustifolia* R. Br. and presumably asked for additional material. The second collection is much less pubescent than the first and the leaves somewhat wider, but otherwise the two agree.

Specimens examined

AUSTRALIA: QUEENSLAND: A.R. Bean 6770, 10.x.1993, Lake McDonald, 4 km NE of Cooroy (AD, BRI, NSW); K. Garraty s.n., 23.ii.1994, Lake McDonald Dam (BRI).

Barleria

B. cristata L. and *B. prionitis* L. naturalised in Queensland

A key has been provided to the four commonly cultivated species but only descriptions of *B. prionitis* L. and *B. lupulina* Lindley were included since they were the only ones naturalised at that time; they were only recorded from the Northern Territory. *B. cristata* L. and *B. prionitis* L. have now both been recorded as naturalised in Queensland, and a description of the former is included below.

Barleria cristata L., *Sp. Pl.* 636 (1753).

Type citation: "India". Syntypes: *Anon. s.n.*, s.dat., India (LINN 805.10, 805.11, 805.12, seen on microfiche in AD).

Shrubs. *Branches* obscurely 4-angled, glabrous, without spines. *Leaves* with blade elliptic to obovate, 4–9 cm long, up to 3 cm wide, entire, acuminate, sparingly appressed pubescent, denser on midrib and veins, dark green without red midrib; petiole to 15 mm long. *Inflorescence* 1–3 flowers per axil. *Bracts* and *bracteoles* linear, c. 1 cm long, spine-tipped, green throughout, entire or toothed, shortly pubescent, lacking glands. *Sepals* white, pale or hyaline with darker coloured reticulate veins; longer pair ovate, c. 20–25 mm long, somewhat unequal, thinly glandular and eglandular hairy on exposed parts, spine-tipped apically and on marginal teeth (prolongation of veins); shorter pair linear, not toothed, c. 9 mm long. *Corolla* blue or violet, rarely white, 4–6 cm long. *Capsules* and seeds not seen on Australian material.

Garden escape, with potential to spread further by its ability to sucker easily. Flowers ?year round.

Specimens examined

AUSTRALIA: QUEENSLAND: *J.R. Clarkson 6405*, 8.iv.1986, Thursday Island, by old gun emplacement on Green Hill (AD, BRI, MBA, QRS); *B.M. Waterhouse 1177*, 29.viii.1990, Portland Roads, village area immediately adjacent to Weymouth Bay (BRI).

Barleria prionitis

Specimen examined

AUSTRALIA: QUEENSLAND: *W.J. Dorney 342*, 7.xii.1993, Ross River, Townsville (BRI).

Odontonema, a new generic record for Australia

A plant usually known as *Odontonema strictum* (Nees)Kuntze, commonly grown in gardens in Australia, has the capacity to spread into natural bushland. Amongst specimens received on loan from BRI was a single specimen of *Odontonema* from the edge of the Noosa National Park, southeast Queensland. This genus belongs in subtribe Odontoneminae along with *Pseuderanthemum*, *Graptophyllum* and *Asystasia*. The species has tubular red flowers, 2–3 cm long, in dense narrow racemes extending well above the leaves.

Odontonema

Odontonema Nees, *Linnaea* 16: 300 (1842) nom. cons.

Type species: Odontonema rubrum (Vahl)Kuntze (*Justicia rubra* Vahl), typ. cons.

Erect shrubs with linear cystoliths. *Leaves* petiolate, opposite pair connected by transverse ridge. *Inflorescence* terminal, raceme-like, flowers in clusters. *Bracts* 2, small; *bracteoles* 2, similar to bracts. *Calyx* small, with 5 segments, free almost to base, more or less equal. *Corolla* red, scarcely 2-lipped, long tubular; lobes 5, short, more or less equal. *Stamens* 2, inserted near middle of corolla tube, included (in Australia); anthers 2-celled, cells parallel, inserted equally; staminodes 2. *Ovary* with 2 ovules per cell; style long; stigma capitate. *Capsule* (not formed in Australia) clavate, basal part lacking seeds; seed-bearing hooks prominent. *Seed* 2 or 4, flat, glabrous.

An American shrub genus of c. 30 species occurring from Mexico to Brazil; a few species are cultivated as ornamentals.

Many of the species of *Odontonema* exhibit distyly with thrum stamens exerted and thrum style included and pin stamens included and pin style exerted. Red-flowered species of the *O. callistachyum* complex, to which the Australian introduction belongs, are thought to be humming-bird pollinated (Daniel 1995).

Within Australia this genus should be easily recognised since it is one of only three in which the flowers are red. *Graptophyllum* is easily distinguished by its woody habit and

distinctly 2-lipped flowers with exserted stamens, while *Stephanophysum* has 4 stamens. In neither genus is the inflorescence raised above the rest of the plant as it is in *Odontonema*.

Odontonema tubaeforme (Bertol.)Kuntze, *Rev. Gen. Pl.* 2: 494(1891).

Justicia tubaeformis Bertol., *Novi Comment. Acad. Sci. Inst. Bononiensis* 4: 405 (1840) n.v.

Type: Guatemala, Escuintla, 1836, *Velasquez s.n.*; holotype: BOLO (n.v., fide Daniel 1995).

Odontonema strictum (Nees)Kuntze, *Rev. Gen. Pl.* 2: 494(1891).

Thysacanthus strictus Nees, A. DC., *Prodr.* 11: 324 (1847).

Type citation: "Honduras, *Armstrong*" (Hooker herb., K, n.v.).

Odontonema callistachyum sensu Fosberg, Sachet & Oliver, *Fl. Micronesica* 5: 34.

Herb 1–2 m tall; branches quadrangular, often longitudinally grooved, subglabrous. *Leaves* elliptic, up to 18 cm long and 8 cm wide, entire or crenulate, long acuminate with the tip sometimes curved to one side, glabrous above and below except for puberulence along the midrib and veins below. *Inflorescence* terminal, raised above rest of plant, consisting of many (opposite or whorled) sessile dichasia in the upper half of rachis up to 30 mm long; rachis shortly and evenly erect, eglandular pubescent. *Calyx* c. 2 mm long, lobes c. 1 mm long, glabrous. *Corolla* red, glabrous, 2–3 cm long, consisting of 15–18 mm long tube, widening into a narrow, 1-sided, 9–10 mm long throat; lobes 4–5 mm long, ciliate at apex. *Stamens* included. *Ovary* ?glabrous; style 14–17 mm long, glabrous; stigma. *Fruits* not formed.

There is much confusion concerning the correct name for this species. Australian material conforms with Fosberg, Sachet & Oliver's (1993) description of *Odontonema callistachyum* (Schltdl. & Cham.)Kuntze in *Flora Micronesica*. Fosberg *et al.* sank the widely cultivated *Odontonema strictum* (Nees)Kuntze into synonymy under *O. callistachyum* since they could perceive no difference between these species. However, in recent papers on Acanthaceae of Panama (Daniel & McDade (1995)) and a revision of *Odontonema* in Mexico (Daniel 1995), *O. callistachyum* is considered to be to be a distinct species with pinkish-purple flowers restricted to Mexico, Brazil and Guatemala. Based on their key, our material appears to identify most closely with *O. tubaeforme* (Bertol.)Kuntze, which includes *O. strictum* (Nees)Kuntze as a synonym..

Specimen examined

AUSTRALIA: QUEENSLAND: *P.R. Sharpe 4302 & G.Batianoff*, 20 March 1986, Noosa National Park, Noosa, c. 300 m SW of Park Rangers Headquarters (BRI).

Asystasia

Asystasia gangetica (L.)T. Anders.

Asystasia gangetica (L.)T.Anderson is commonly cultivated in tropical Australia. Previous records from Kununurra and diverse locations in northern Queensland were known to be garden escapes but it was unclear whether the species had become naturalised. Collections from Port Douglas from a vacant block were clearly naturalised as was a recent collection from about an old settlement on Groote Eylandt.

Specimen examined

AUSTRALIA: QUEENSLAND: *W.R. Barker 5578*, 21.vii.1988, Port Douglas, vacant block 200–300 m back from beach (AD).

NORTHERN TERRITORY: *B.M. Waterhouse 3170*, 10.v.1994, Bartalumba Bay, Groote Eylandt (AD, DNA).

***Asystasia* "Newcastle Bay" (Brass 18671)**

The unnamed *Asystasia* species, represented by a single Brass collection from Newcastle Bay (Brass 18671), has also been collected from the Mount Molloy area. This collection varies somewhat from the Brass collection in hair covering and flower size, since it is covered in all parts only with lax eglandular hairs and the flowers have the tube and throat 13.5 mm long (cf. 8–10 mm), and the free filaments of the stamens 5 and 7.5 mm long (cf. 3 and 4.5 mm). Flowers are recorded as "white or very pale pink with dark pink spotting" and the collection was made from the "margin of a deciduous vine thicket on steep boulder strewn slope", a locality rather different from the coastal sand dunes of the Brass collection.

Specimen examined

AUSTRALIA: QUEENSLAND: J.R. Clarkson 7910 & R.J.F. Henderson, 18.iv.1989, Font Hills, c. 15 km W of Mt Molloy (AD, BRI, K, L, MBA, QRS).

Xerothamnella**A disjunct location of *Xerothamnella parvifolia***

Xerothamnella parvifolia C.T. White, previously known only from southern central Queensland and north-western New South Wales has now been collected on several occasions from the Flinders Ranges, South Australia. These collections represent a disjunction of some 3–400 km between Mt Poole in NSW and Big Moro Gorge in SA and indicate a once much wider distribution for the species. The status and management of the South Australian populations of this species are discussed in Davies (1995).

Specimens examined

AUSTRALIA: SOUTH AUSTRALIA: R. Bates 22955, 15.iv.1990, 5 km E of Big Moro Gorge (AD).

Extra collections of *X. herbacea*

There are two further collections of *X. herbacea* R.M. Barker within the collections of the Brisbane herbarium. The recent Forster collection (Forster 9860) was found some distance from the type locality of Chinchilla while the older collection (Johnson 2689B) was from further north in the Theodore area. Both collections are from heavy soils in brigalow (*Acacia harpophylla*), as was the type collection.

Specimens examined

AUSTRALIA: QUEENSLAND: P.I. Forster 9860, 7.v.1992, Burraburri Creek, 16 km W of Durong (BRI, MEL); R.W. Johnson 2689B, 27.ix.1963, Site of Brigalow Research Station, 20 miles NW of Theodore (BRI).

Dicliptera**First collection of *Dicliptera australis* (Nees)R.M. Barker since 1818.**

Dicliptera australis (Nees)R.M. Barker was recollected by A.A. Munir in 1988. Until then it had been thought to quite possibly be extinct since there were no collections known other than those made by Allan Cunningham in 1818 from Goulborn Island. The species was relocated on the mainland near Goulborn Islands. Since it differs from the rest of *Dicliptera* in possessing non exerted stamens, Nees described it as a distinct genus.

Corollas in the specimens have a combined tube and throat length of 10mm and lobes of 3–4 mm. There appear to be no markings or striations. Capsules are as for *D. arnhemica*, with only a covering of glandular hairs at the apex, and the seeds are smooth, glabrous and 2.5 mm long. *D. australis* and *D. arnhemica*, which are unique in *Dicliptera* by sharing the characteristic of equally inserted anther cells, can be distinguished from each other not only by the inserted and exerted stamens but also by the lack of striations on the corolla lobes in

D. australis and their much shorter length (3–4 mm compared to 10–17 mm long in *D. arnhemica*).

Specimen examined

AUSTRALIA: NORTHERN TERRITORY: *A.A. Munir 6172*, 6.vi.1988, 38 km SE of Murgella at the junction of the road leading to Wunya Beach towards Aurari Bay (AD 2 sheets, duplicates in BRI, CANB, DNA, NSW, PERTH).

Hypoestes

Authorship of introduced and commonly cultivated *Hypoestes aristata*

The introduced and commonly cultivated species of *Hypoestes* is often wrongly called *H. antennifera* S.Moore. The correct name and synonymy is given below. It has the potential to become a serious environmental weed; naturalised plants have already been recorded in Queensland and New South Wales and specimens have been seen in South Australia.

Hypoestes aristata (Vahl)Sol. ex Roemer & Schult., *Syst. Veg.* 1: 140 (1817).

Justicia aristata Vahl, *Symb. Bot.* 2: 2(1794) see Balkwill & Norris, *S. Afr. J. Bot.* 51: 133–144 (1985). Basionym.

H. antennifera S. Moore, *J. Bot.* 18:41 (1880).

This species, now also used within the cut flower trade, is easily grown from cuttings and produces copious fruits with fertile seed. It can be distinguished from the native species, *H. floribunda* R. Br., by its dense axillary clusters of flowers and the long “aristate” apices of the outer involucre bracts. These bracts are only fused for about 1 mm at the base and the long apices, which are not truly aristate since they are not stiff, are covered with glandular hairs.

Specimens examined

AUSTRALIA: NEW SOUTH WALES: *R.G. Coveny 16243*, 5.viii.1992, Darling Mills Creek off Mahers Rd, West Pennant Hills in Cumberland SF extension (AD, BRI, CBG, K, MEL, MO, NSW, PRE).

QUEENSLAND: *L. Pedley 5373*, 3.v.1987, St Lucia, Brisbane (BISH, BRI, LAE, NSW).

“Freckle Face” *Hypoestes*

The plant commonly cultivated under the name “Freckle face”, “Pink-Dot” or “Baby’s-Tears” with white or pink spots on the green leaves, is a species of *Hypoestes*, probably *H. phyllostachya* Bak.. It is recorded as a garden escape in Queensland and has also been noted as established in a lawn on G.T.Short’s property at Curramulka in South Australia.

Specimen examined

AUSTRALIA: QUEENSLAND: *A.R. Bean 5366*, 1.i.1993, 15.2 km along Silver Valley Rd, SW of Herberton (BRI).

Graptophyllum

A new species of *Graptophyllum*, *G. reticulatum* Bean & Sharpe, has been described from Queensland (Bean & Sharpe 1991). This species has the large toothed leaves of *G. ilicifolium* (F. Muell.)F. Muell. ex Benth., but unlike that species with its large red flowers, *G. reticulatum* has small white flowers as in *G. spinigerum* F. Muell. In the same paper, Bean & Sharpe also reduced *G. thorogoodii* C.T. White to *G. excelsum* (F. Muell.)Druce. Without a better understanding and a comprehensive analysis of the leaf and flower variation of all of the species of *Graptophyllum* in Queensland this was possibly premature. Most of the comments concerning the taxonomy of the genus in 1986 are still relevant although there has been no evidence to support the suggestion of different flower sizes on

the one plant. There still remains difficulty in placing much of the sterile material, and even some collections with flowers (e.g. *McDonald 5684* from Shoalwater Bay has the same size leaves as *G. ilicifolium* (F. Muell.)F. Muell. ex Benth. but lacks the spiny margins of that species), and the doubts expressed concerning the present species status persist.

G. spinigerum has now been recorded from the Northern Territory.

Specimen examined

AUSTRALIA: NORTHERN TERRITORY: *J. Russel-Smith 3913* & *C.R. Dunlop*, 1.xi.1987, Devil Devil Pass, N Central Arnhem Land (AD, BRI, CANB, DNA, MEL, NSW, QRS).

Justicia s.lat.

Since the revision, Graham (1988) has published her results of a survey of some of the morphological characters of *Justicia* sens.lat. She advocates a broad approach which I am still reluctant to adopt for the same reasons given in the revision; the chief objection remains the lack of characters to distinguish the genus from related genera and the variable interpretation of the genus throughout the world. It is now regarded by some authors merely as a holding genus (e.g. Henrickson & Hiriart 1988, Wasshausen 1992) highlighting the need for detailed analytical work within the group. The genera recognised in Australia correspond to sections delimited by Graham.

Name change for *Sarojusticia* and *Calophanoides*

As already discussed in my previous paper (Barker 1986), *Sarojusticia* Bremek. and *Calophanoides* (Clarke)Ridley need to be combined. This was not done in that paper since I was unsure about the status and validity of the predominantly African genus *Calophanoides*. Graham (1988) treated both *Calophanoides* and *Sarojusticia* as part of Sect. *Harnieria* of *Justicia*. A revision of the tropical African species of that group has also been published by Hedren (1989). New combinations and a new species are published below, while a new subspecies of *Harnieria kempeana* from the Cape Range is published in this same journal by Lepschi.

Harnieria

Harnieria Solms-Laub., *Sitzb. Ges. Naturf. Fr. Berlin*, 1864: 1 (1864) n.v.

Justicia sect. *Harnieria* (Solms-Laub.)Benth. in Benth. & Hook.f., *Gen. Pl.* 2: 1109 (1876).

Type: *Harnieria dimorphocarpa* Solms.-Laub.

Justicia sect. *Calophanoides* Clarke in Hook.f., *Fl. Brit. India* 4: 530 (1885).

Calophanoides (Clarke)Ridley, *Fl. Malays. Pen.* 2: 592 (1923).

Type: *Justicia quadrifaria* (Nees)T. Anders. (fide Graham 1988).

Sarojusticia Bremek., *Acta Bot. Neerl.* 11:195 (1962).

Type: *Sarojusticia kempeana* (F. Muell.)Bremek. ex H. Eichler.

***Harnieria hygrophiloides* (F. Mueller)R.M. Barker comb. nov.**

BASIONYM: *Justicia hygrophiloides* F. Mueller, *Fragm. Phyt. Austral.* 6: 89(1867).

Calophanoides hygrophiloides (F. Mueller)R.M. Barker. For typification see Barker 1986.

There is a single specimen, retained from the original BRI loan, which may represent either another species of *Harnieria* for Australia or it may be part of the variation of *H. hygrophiloides*; there is insufficient material to determine this. A brief description is included here in the hope that further collections might clarify its status.

***Harnieria* "Mt Garnet" (Myers s.n.)**

Sprawling shrub, branchlets c. 20 cm long, 4–6-angled and longitudinally furrowed, densely covered with short suberect white eglandular hairs, sparser with age. *Leaves* with petioles 1.5–2 mm long; blade elliptic, 7–11 × 3.7–6 mm, subentire, rounded obtuse or shallowly emarginate apically, densely pubescent with similar hairs to those on stem, becoming sparser with age and confined to petiole midribs and margins; cystoliths dot-like. *Inflorescence* of sessile, solitary flowers in the axils of each leaf i.e. 2 per node. *Bracts* obovate, of similar length to calyx, c. 4.5 mm long, 1.7 mm wide, rounded obtuse or possibly shallowly emarginate apically. *Bracteoles* obscure. *Calyx* segments c. 4.5 mm long, 0.4 mm wide, moderately densely pubescent with similar hairs to branches; cystoliths not visible. *Corolla* colour unknown but probably white with purple markings, externally pubescent, c. 8 mm long overall. Upper anther cell c. 0.7 mm long, sparsely hairy on back; lower anther cell basally spurred. *Ovary* moderately densely pubescent apically, hairs extending on to base of style. *Capsule* not seen.

Found on yellow chocolate soil in savannah woodland. Flowering December.

This collection differs from *H. hygrophiloides* by its externally pubescent corolla, solitary flowers, smaller leaves and bracts and the apparently non emarginate bracts. More collections are required before the taxon can be formally described.

Specimen examined

AUSTRALIA: QUEENSLAND: R.J. Myers s.n., 19 Dec. 1960, Queensland, St Ronan's Station, Mt Garnet (BRI).

***Harnieria kempeana* (F. Mueller) R.M. Barker, comb. nov.**

BASIONYM. *Justicia kempeana* F. Muell., *Fragm. Phyt. Austral.* 11: 101 (1880)p.p. (excluding Giles collections belonging to *Dicladanthera* and *Dipteracanthus*).

Sarojusticia kempeana (F. Muell) Bremek. ex H. Eichler, *Suppl. Black's Fl. S. Austral.* 284 (1965). Typification see Barker 1986

***Harnieria kempeana* ssp. *muelleri* (R.M. Barker) R.M. Barker, comb. nov.**

BASIONYM. *Sarojusticia kempeana* ssp. *muelleri* R.M. Barker, *J. Adelaide Bot. Gard.* 9: 243 (1986).

Note that a new subspecies, *Harnieria kempeana* ssp. *rhadinophylla* has been described from the Cape Range in Western Australia by B. Lepschi in a separate paper within this journal.

Rhaphidospora***Rhaphidospora cavernarum* (F. Muell.) R.M. Barker recollected and identified with a later named New Guinea species**

Included with a loan of specimens of Acanthaceae from BRI were a number which had been misidentified as *Asystasia australasica* F.M. Bailey. These specimens agreed with material from New Guinea (LAE) which had been identified as *Rhaphidospora platyphylla* (S. Moore) Bremek. and it was originally my intention to publish them as such. However it seemed likely on closer examination that the specimens, although much more robust, were conspecific with *Rhaphidospora cavernarum* (F. Muell.) R.M. Barker, of which only fragments had been seen for the revision. They have been treated as such here, and the later names, *Justicia platyphylla* S. Moore and *Rhaphidospora platyphylla* (invalid, since the basionym was not referred to by Bremekamp when he made the combination in 1957) have

been reduced to synonymy. An expanded description is included here since the original description in the revision (Barker 1986) had many unknown states.

Rhaphidospora cavernarum (F. Muell.) R.M. Barker, *J. Adelaide Bot. Gard.* 9: 232 (1986) see there for synonymy and typification.

Justicia platyphylla S. Moore, *J. Bot.* 58: 193 (1920).

Rhaphidospora platyphylla (S. Moore) Bremek., *Nova Guinea* n.s. 8: 151 (1957) nom. invalid. (basonym not cited).

Types: *C.T. White 270*, Astrolabe Range, New Guinea (BRI, ?BM, n.v.); *C.T. White 546*, Dilava (BRI, ?BM n.v.).

Perennial, tuberous herb, 30–100 cm high; branchlets longitudinally striate, constricted above nodes, glabrous apart from a line of sparse white recurved eglandular hairs, not spinescent. *Leaves* ostensibly with petioles 0.5–2 cm long, but the blade frequently continuing thinly to node on at least one side; blade ovate, 3–12 cm long, 1.5–6.5 cm wide, smaller leaves rounded at base, older apparently attenuate, crenate, rounded acute apically, glabrous apart from sparse recurved white hairs along margin, darker above than below. *Inflorescence* a 15–30 mm long terminal di- and trichotomously branched panicle with much shorter, less branched panicles also arising from the axils below; peduncles with mixed short, erect, simple, colourless eglandular hairs overtopped by less frequent, longer and wider, simple glandular hairs, dense when young but progressively sparser with age. *Bracts* and bracteoles c. 1 mm long, with similar indumentum to peduncle, glabrescent. *Pedice*l c. 1 mm long. *Calyx* segments 2–3 mm long, similar indumentum to peduncle. *Corolla* white with purple palate on lower lip, externally covered with moderately dense, simple, white eglandular hairs; tube 5–6 mm long; upper lip 2.7–3.5 mm long, notched, possibly with glabrous style channel; lower lip with median lobe c. 4 mm long, lateral lobes c. 5.5 mm long. *Stamens* with glabrous filaments, c. 2.5 mm long; anther cells 0.7 mm long, pubescent on back of apical cell, appendage on lower cell 0.4–0.5 mm long. *Ovary* glabrous; style eglandular pubescent at base, glabrous distally. *Capsule* 12 mm long, lower half constricted into narrow stalk, widened above into seed-bearing portion c. 3 mm wide, covered all over with simple white, eglandular hairs. *Seed* pale brown, dark brown with age, covered all over with 0.2–0.3 mm long, obscurely barbed, spines.

Often locally common and dominant in the ground cover in deciduous vine thicket or nophyll vine forest, but also found in rocky areas or river beds. Flowering March to July.

There are minor differences in the pubescence of the rachis of the inflorescence, that of the Australian material having a dense covering consisting of longer glandular hairs above a glandular puberulence, while the New Guinea material tends to only have occasional longer glandular hairs if any, and the puberulence is less dense. Leaves of the Australian material are crenate, while those of the New Guinea sheets are entire. Without a better range of material it is not justifiable to separate these.

New Guinea notes record the species from “poor primary lowland rainforest” (*Schodde 2810*) and as a “ground cover near stream bank” (*Womersley NGF12364*).

Reference was made in Barker (1986), under *R. cavernarum*, to the need for a study to be made of the *R. glabra* (or *Justicia glabra* Koenig) complex of tropical Africa and India, since *R. cavernarum* could be conspecific with it. Moore (1920) also commented without specific detail, on differences between *J. glabra* (of India) and *J. platyphylla* in foliage and corolla; he considered that *J. platyphylla* resembled a Philippine plant distributed as “*Justicia glabra* Koen. var.” in foliage although the “flowers are quite different”.

Sankowsky notes on his collection (*Sankowsky 999*) that this species possesses large tubers deep underground, and Fell (*Fell 3254*) notes that the leaves are browsed by wild cattle.

Specimens examined

AUSTRALIA: QUEENSLAND: COOK DISTRICT: *D.G. Fell 2965B & J.P. Stanton*, 26 March 1993, Bathurst Range, Kalpowar Pastoral Holding, 68.5 km N of Lakefield HS (BRI, DNA, MEL, CANB, MBA); *D.G. Fell 3209 & J.P. Stanton*, 8 May 1993, Cape Melville N.P., Altanmou Range Section, 1.6 km E of Flat Hill, 62.6 km NE of Lakefield HS (BRI, CANB); *D.G. Fell 3509 & R. Jensen*, 21 August 1993, Mount White, 3 km SSW of Coen, Lochinvar Holding, Cape York Peninsula (BRI); *D.G. Fell 3254 & J.P. Stanton*, 9 May 1993, Upper Howick River, 48.9 km ENE of Lakefield HS, Kalpowar Pastoral Holding, (BRI); *PD.G. Fell 3434, R. Jensen & G. Barnes*, 17 Aug 1993, Round Mountain, Embley Range, 8.5 km WSW of the Nesbit River mouth, 54.1 km NE of Coen (BRI, MEL); *P. Forster 10057, M.C. Tucker & G. Kenning*, 3 June 1992, 27 km along road to Leo Creek Mine, McIlwraith Range (BRI, QRS); *P. Forster 10482 & Tucker*, 13 June 1992, Round Mountain, Embley Range (AD, duplicated in BRI, K, L, MEL, QRS). *P. Forster 10404 & Tucker*, 12 June 1992, Chester River Scrub, eastern fall of McIlwraith Range, Silver Plains Station (BRI, QRS); *P. Forster 15392 & Tucker*, 29 June 1994, Hill 334, Pascoe River (BRI, QRS); *P.I. Forster 13599, G. Sankowsky & M.C. Tucker*, 14 July 1993, 8 km past Pascoe River Crossing on road to Portland Roads (BRI, QRS); *P.I. Forster 13528, G. Sankowsky & M.C. Tucker*, 10 July 1993, Pascoe River Crossing, road to Iron Range (BRI, DNA, QRS); *G. Sankowsky 999, N. Sankowsky, P. & A. Radke*, 25 June 1989, Archer River (BRI).

PAPUA NEW GUINEA: *R. Schodde 2810*, 17.viii.1962, near Rigo, Central District, Papua (LAE, duplicates not listed); *J. Womersley NGF12364*, 1.ix.1967, 2 miles inland from Kapa Kapa, Rigo subdistrict, Papua (LAE 2 sheets, duplicated in BRI, L).

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